

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing (day/month/year) **See form PCT/ISA/210**

Applicant's or agent's file reference
P2004, 0138WO

FOR FURTHER ACTION

See paragraph 2 below

International application No. PCT/DE2005/000248	International filing date (day/month/year) 14.02.2005	Priority date (day/month/year) 16.02.2004
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International Patent Classification (IPC) or both national classification and IPC
H01L23/58, H01L23/13, H01L29/06

Applicant
INFINEON TECHNOLOGIES AG

1. This opinion contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the opinion |
| <input checked="" type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application |

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/EP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐

This opinion has been established on the basis of a translation from the original language into the following language

_____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐

a sequence listing

☐

table(s) related to the sequence listing

b. format of material

☐

in written format

☐

in computer readable form

c. time of filing/furnishing

☐

contained in the international application as filed.

☐

filed together with the international application in computer readable form.

☐

furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

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Box No. II

Priority

1. ☐ The following document has not yet been furnished:

☐ copy of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date in the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43bis.1 and 64.1) is the claimed priority date.

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Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	5	YES
	Claims	1-4	NO
Inventive step (IS)	Claims		YES
	Claims	1-5	NO
Industrial applicability (IA)	Claims	1-5	YES
	Claims		NO
2. Citations and explanations:			
1	Reference is made to the following documents:		
	D1: WO 02/065548 A (INFINEON TECHNOLOGIES AG; JANKE, MARCUS; LAACKMANN, PETER) 22 August 2002 (2002-08-22)		
	D2: PATENT ABSTRACTS OF JAPAN vol. 2003, no. 10, 8 October 2003 (2003-10-08) & JP 2003 174114 A (FUJI ELECTRIC CO LTD), 20 June 2003 (2003-06-20)		
2	The computer-generated translation of the Japanese published application D2 is appended to the opinion as an annex. The translation is also available online on the following Internet page www.ipdl.ncipi.go.jp/homepg_e.ipdl .		
3	Novelty (PCT Article 33(2)) of claim 1 D1 (figure 6) discloses an integrated circuit arrangement (1, 2, 3) comprising a non-planar substrate (1) on which an integrated circuit (2, 3) is formed on at least one side,		

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	<p>characterized in that that side of the substrate (1) which has the integrated circuit (2, 3) is arranged on a carrier (5) and the carrier (5) is produced from a chemically resistant material. Therefore, the subject matter of claim 1 does not appear to meet the requirements of PCT Article 33(2).</p>
4	<p>Dependent claims 2-5 do not contain any features which, in combination with the features of any claim to which they refer, meet the PCT requirements for novelty and inventive step. The reasons are as follows:</p>
4.1	<p>D1 (page 2: lines 16-19, figure 6) discloses that the chemically resistant material of the carrier (4, 5, 6) is formed from ceramic. Therefore, the subject matter of claim 2 does not appear to meet the requirements of PCT Article 33(2).</p>
4.2	<p>D1 (figure 6) discloses that the carrier (4, 5, 6) has a planar surface on a side which is remote from the integrated circuit (1, 2, 3). Therefore, the subject matter of claim 3 does not appear to meet the requirements of PCT Article 33(2).</p>
4.3	<p>D1 (figure 6) discloses that the substrate (1) is connected to the carrier (4, 5, 6) over the entire area. Therefore, the subject matter of claim 4 does not appear to meet the</p>

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Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

requirements of PCT Article 33(2).

4.4

As an alternative to the elevations (4, 6) disclosed in D1 (figure 6), a person skilled in the art would also use recesses (see D1, page 5: lines 1-3) in order to produce the integrated circuit arrangement in a non-planar form. He would then readily place the integrated circuit arrangement in a concave cavity (see, for example, D2, paragraphs 14, 15, figure 3) which may also be larger than the integrated circuit and would thus completely hold the integrated circuit. Therefore, the subject matter of claim 5 does not appear to meet the requirements of PCT Article 33(3).

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

- 1 Clarity of claim 1
The phrase "chemically resistant material" in claim 1 is vague and unclear and leaves the reader uncertain as to the meaning of the technical feature in question. For example, gold is "chemically resistant" to hydrochloric acid but not to aqua regia. As a result, the subject matter of said claim is not clearly defined (PCT Article 6).